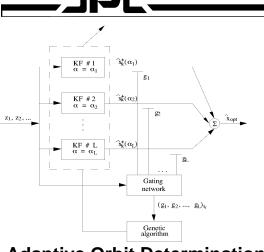
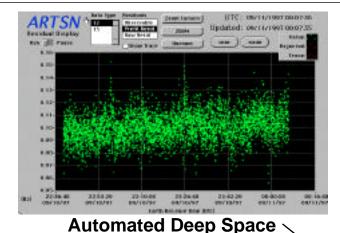
## TELECOMMUNICATIONS AND MISSION OPERATIONS

## **Navigation Work Area**







**Orbit Determination** 

High-Fidelity navigation algorithms

Navigation planning and support

- Navigation System Design
- Automated data conditioning
- Real-Time Software Design
- Automated Trajectory Design
- Automated Maneuver Design

**Adaptive Orbit Determination** 

**Navigation at Small Bodies** Navigation in **Unstable Orbits** 

and Manifolds

Skills leading to techniques that improve navigation

Skills leading to Systems for ground-based and on-board

• Low-cost methods that streamline DSN navigation operations

autonomous navigation efforts capability "Next "Next "Next Generation" Automated Small Body Generation" Generation" Adaptive Maneuver Navigation Automated Automated Automated Filtering Design Tool S/W System S/W System S/W System Design Demo Delivery Demo Delivery in Use Core **FY98 FY99** FY02 **FY00 FY01** FY03

**High-Level Timeline**